

Appln. No.: 10/736,077
Amendment Dated: January 23, 2009
Reply to Office Action dated November 9, 2008

Amendments to the Specification:

Please replace paragraph [0024] with the following amended paragraph:

[0024] In Figure 2, mailing system 22 includes address printer controller 13, address printer 14, postage meter 16, and indicia printer 20, which are substantially similar to the corresponding prior art elements shown in Figure 1. System 22 differs in including data stores 21 and 23 communicating with controller 13 for the purpose of storing characterizing information produced by controller 13. Thus, data store 21 stores a plurality (inventory) of characterizing algorithms, as will be described further below, and data store 23 stores at least a print/scan filter which, when applied to the pristine digital image generates a filtered image which approximates the transformation of the pristine image by the printing and scanning processes. In other embodiments, data store 26 stores one or more defacing filters which simulate blots, smudges, failure of print elements or scanner sensors, or other, similar occasional defects which can not easily be incorporated into said print/scan filter to create one or more defaced images. Together, meter 16, printer 20, form secure postal indicia printing system 22.

Please replace paragraph [0029] with the following amended paragraph:

[0029] Another algorithm, where the characterizing information comprises measurements of the number of “outliers” in each word (or each line) which make up address A, is shown in Figure 4. (By “outliers” herein is meant ascenders or descenders and portions of capitals that project beyond thresholds, which are preferably

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determined by the upper and lower bounds of lower case letters without ascenders or descenders, such as "a", "c", "e", etc.) Address A is parsed to identify individual words, if necessary, by first identifying line spaces *Ls* by determining the occurrence of large amounts of horizontal white space between blocks of printed text, and then identifying word spaces *ws* by determining the occurrence of large amounts of vertical white space between blocks of printed text (as shown with respect the first line of address A). Otherwise only the lines need be identified. Fig. 4 shows at line 40, a line that defines the upper boundary of a lower case characters in line I of the address block (Danny A. LellisLelli). At line 42 is shown the lower boundary of the lower case characters in the same line of the address A. Ascenders of the text in line I are shown at 34 and 36 (character A and L and II). The descenders are shown at 41.

Please replace paragraph [0031] with the following amendment paragraph.

[0031] Another algorithm in which the characterizing information comprises a description of the shape of the address block is shown in Figure 5. The shape is determined by using a conventional "best fit" scanning algorithm which encloses address block A with "best fit" closed curve 50550. (It should be understood that various algorithms for generating a best fit curve will generate different curves. These differences do not affect the subject invention so long as the same algorithm is used to generate the curve whose description is incorporated into the indicium and to recover the curve from the address block when the indicium is validated.) Preferably, curve 50550 is constrained. That is the manner in which a curve can be generated is limited so that the resulting curve is simplified and can be described with limited information. In Figure 5, curve 50-550 is formed from linked straight line segments, such as segment 5 51551, which are limited to eight "directions", up (U), down (D), left (L), right I, up-right (UR), up-left (UL), down-right (DR), and down-left (DL); viewed as being generated

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starting in the upper left corner of address block A and traveling clockwise around address block A. Preferably the curve 50-550 also accounts for spaces between characters, words and lines, treating these spaces as equivalent to printed space, so that curve 50-550 does not become too convoluted and require extensive descriptive information. It is within the skill of a person skilled in the art to provide an algorithm which will generate robust and compact characterizing information, as described above

Please replace paragraph [0036] with the following amended paragraph:

[0036] At step 64, controller 13 inputs a print/scan filter which simulates the printing process of printer 14 and the scanning process to be carried out at a remote postal facility from data store 26 and applies it to image P to generate a filtered image, F, which approximates the image which will be scanned from the mail piece at the postal facility. And at step 66 sets index i equal to 1 and variable R equal to 0 ~~and at step 70.~~

Please replace paragraph [0037] with the following amended paragraph:

[0037] And at step 70 the controller applies the ith characterizing algorithm C_i to images P and F to generate corresponding descriptors $C_i(P)$ and $C_i(F)$; each comprising a sequence of M characterizations, or values, $C_i(P)_1$ through $C_i(P)_M$; $C_i(F)_1$ through $C_i(F)_M$. Then at step 72, controller 13 compares descriptors $C_i(P)$ and $C_i(F)$ to estimate a robustness value R_i for the ith algorithm C_i , with respect to a particular image P.